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1ZTR1204002400

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NOTES

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET	

AS-BUILT BY _____ DATE 13.03.2014

04	13.03.2014	HD	FOUR MODIFICATION	GK		-
03	26.01.2013	HD	THIRD MODIFICATION	GK		-
02	31.10.2012	HD	SECOND MODIFICATION	GK		-
01	22.08.2012	HD	FIRST MODIFICATION	GK		-
00	05.04.2012	HD	FOR APPROVAL	GK		-
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.



DRAWN BY _____ H.D. _____ CHECKED BY _____ GK _____ SCALE _____
DATE STARTED 05.04.2012 DATE COMPLETED _____
OPRG. DEPT. _____ ENG. DEPT. _____

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CERTIFIED
DDC NO. _____ REV. NO. _____

CONTROL PANEL OF COOLING AND PROTECTIVE DEVICES
1ZTR1204002400
S/S # 8179 AL-NAZEEM, IN RIYADH AREA (GT2)
RIYADH SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
11131072/00	A	C418	-	01 of 34	05

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4	Layout	03	26/01/13
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6	Power circuit of supply voltage	03	26/01/13
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9	Control circuit of fan Group 2 motors	01	22/08/12
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12	Protection relays of power transformer	04	13/03/14
13	Morgan Schaffer Calisto 2	02	26/01/13
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32	Terminals -X7	02	31/10/12
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34	Terminals -X9	02	26/01/13

See drawing 1ZTR1204002401 which will be ready after manufacturing for marking of conductors.

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05	Index	-	13/03/14
04	Index	-	29/07/13
03	Index	-	26/01/13
02	Index	-	31/10/12
01	Index	-	22/08/12

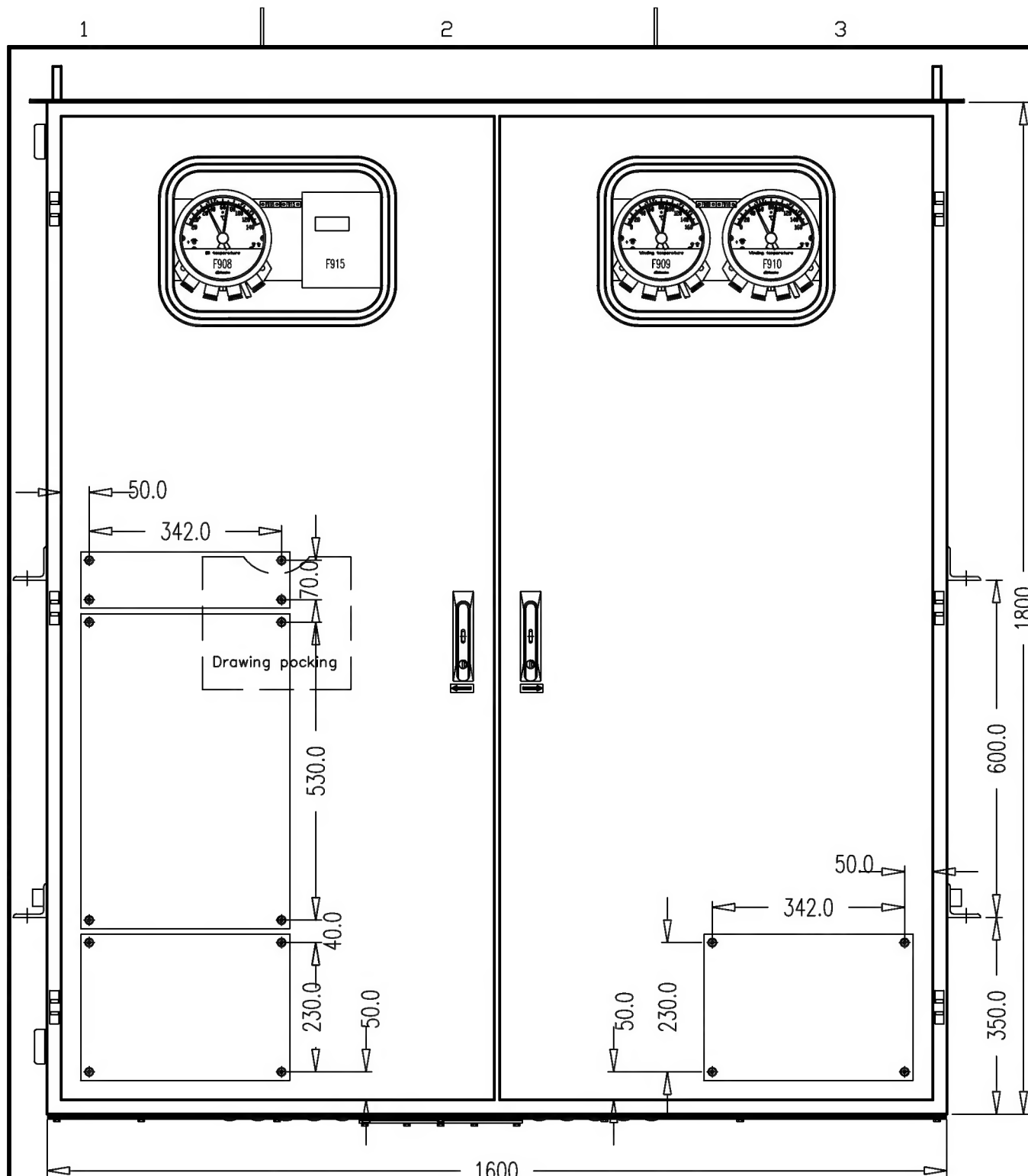
Production engineering review
Inspection engineering review
Design engineering review

ABB ELEKTRIK SANAYI A.S.			
Based on	Reg.No.	Title	
Prepared SD	Responsible department GK	CONTROL PANEL OF COOLING AND PROTECTIVE DEVICES	Language en
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ABB ABB Transformers

1ZTR1204002400

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FRONT VIEW

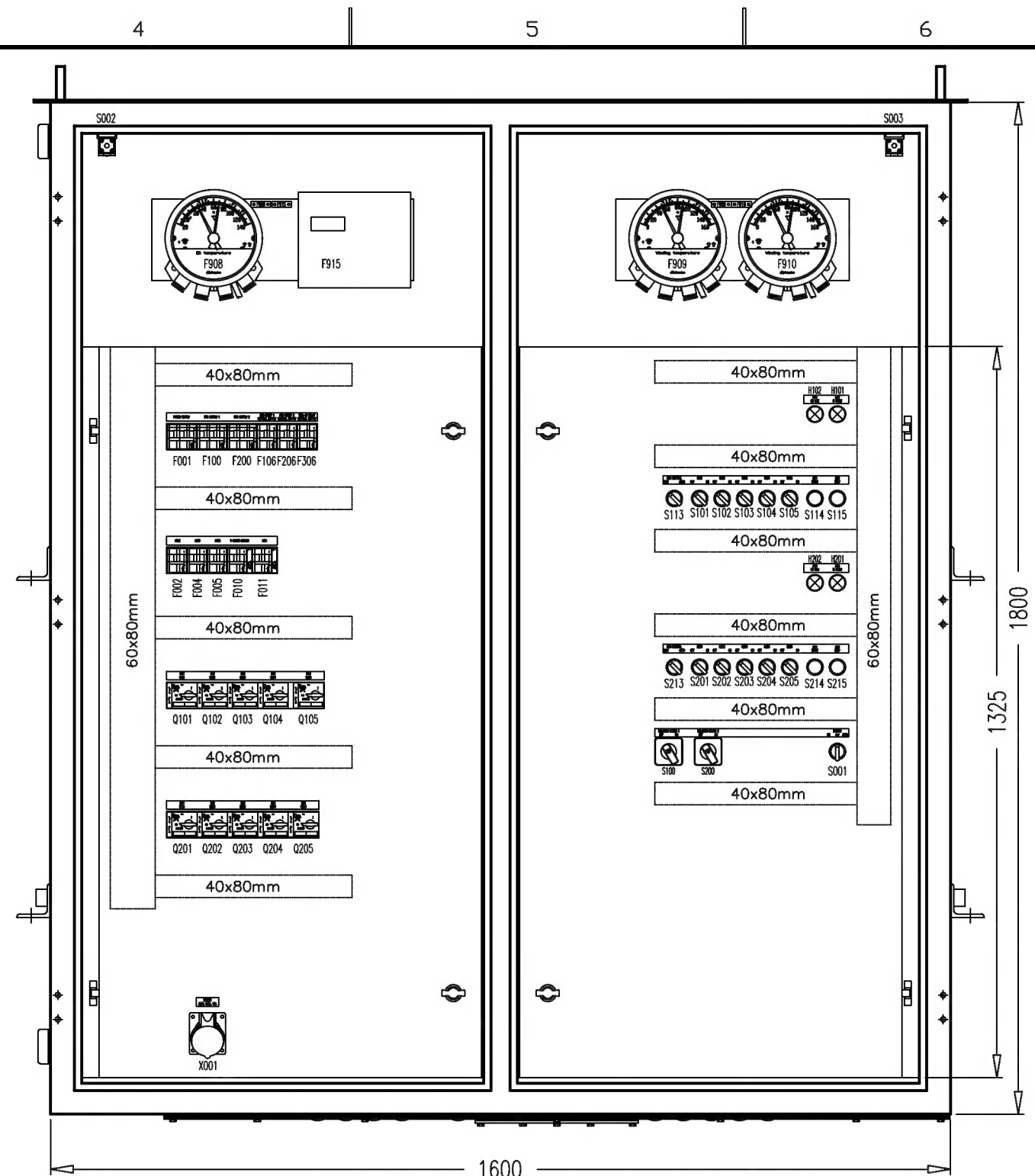
NOTES:

- 1-PAINING:
RAL : 7038
- 2-DIMENSIONS: 1800X1600X400
mm (HxWxD)
- 3-DEGREE OF PROTECTION: IP 55
- 4-THICKNESS OF PANEL: 2.5 mm
(STEEL)

Layout

02	View Changed	-	31/10/12
01	F306 Added	-	22/08/12
Rev. ind.	Revision	Appd.	Date

Production engineering review
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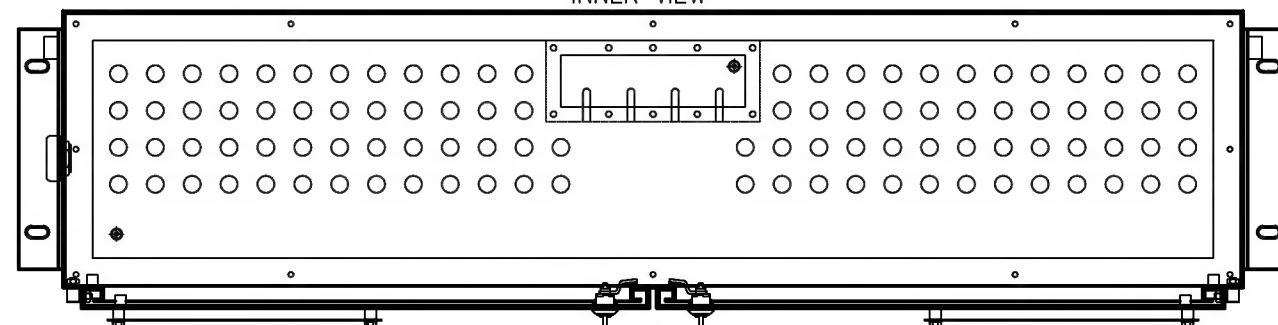
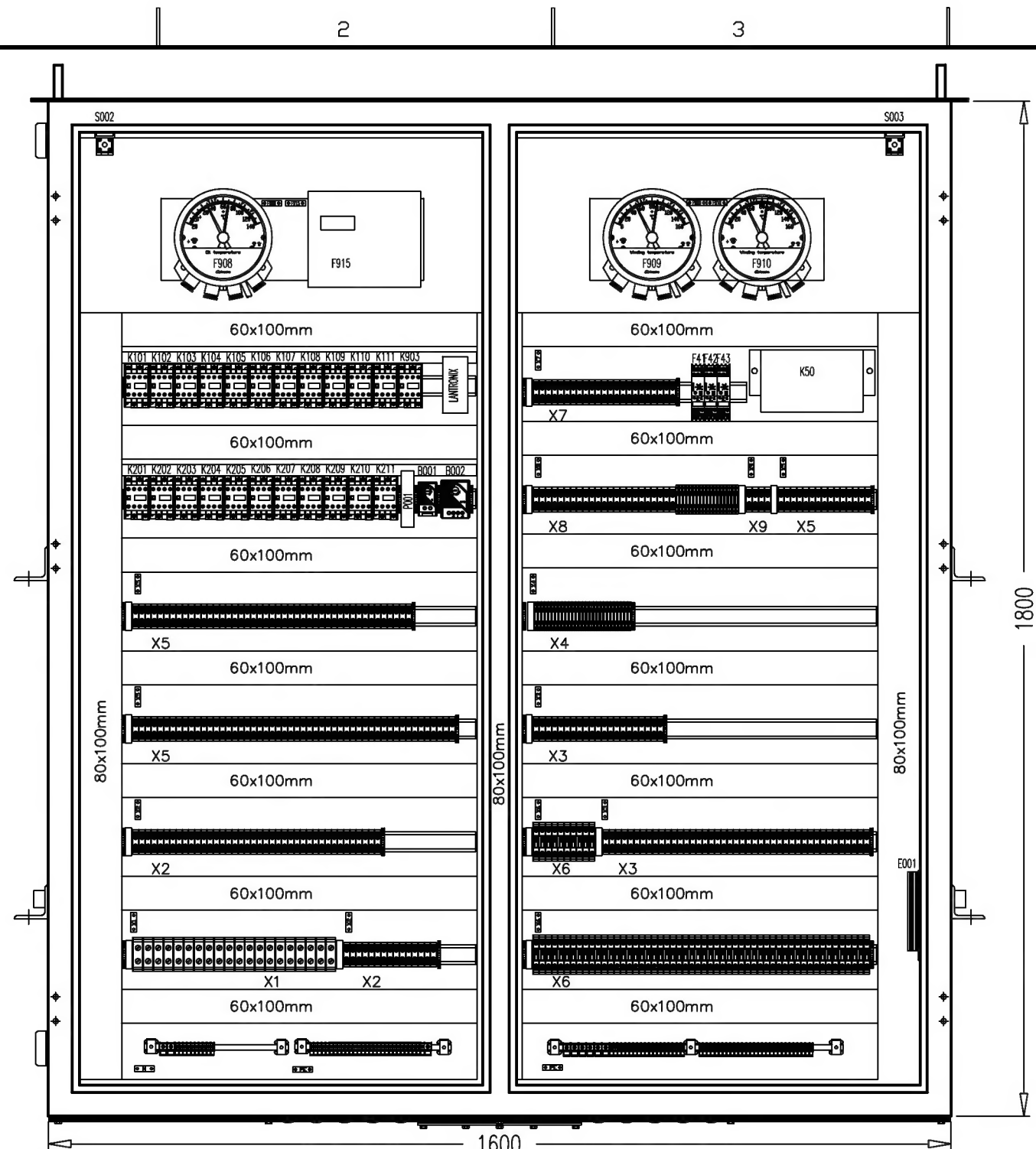
INNER DOOR VIEW

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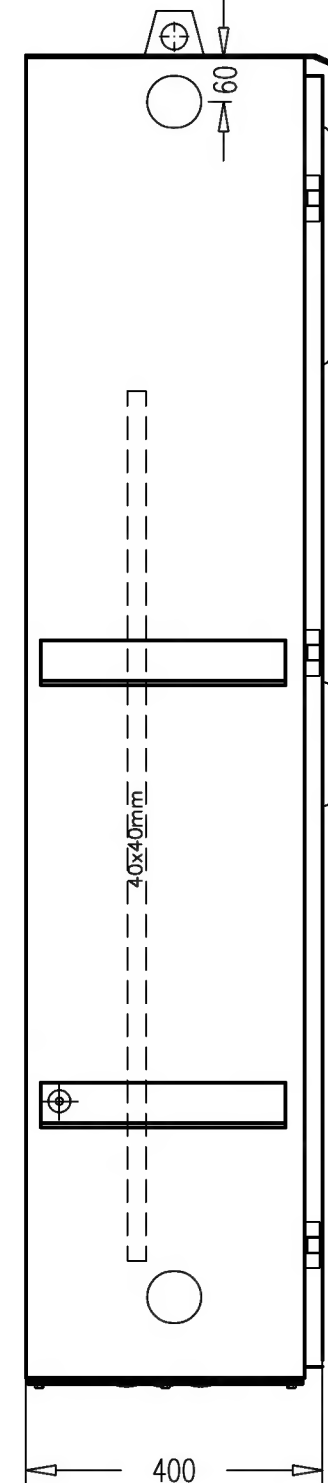
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Layout

Internal Wiring : Type 600/1000 V

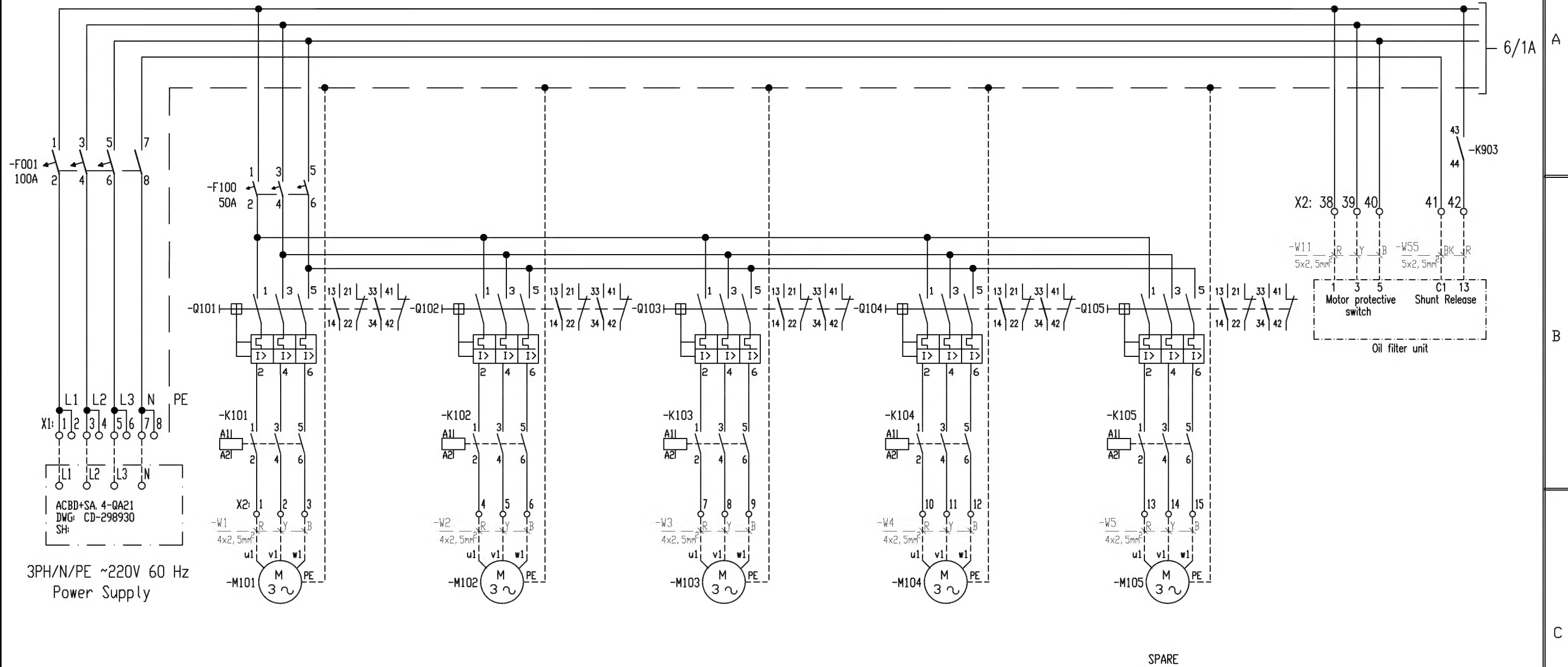


SIDE VIEW

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Note : Thermal set value of Q101,Q102,Q103,Q104,Q105 : 5A

Power circuit of fan motors

03	Revised	-	13/03/14
02	Lineis Edited	-	31/10/12
01	W11 Line Edited	-	22/08/12
Rev. ind.	Revision	Appd.	Date

Production engineering review

Inspection engineering review

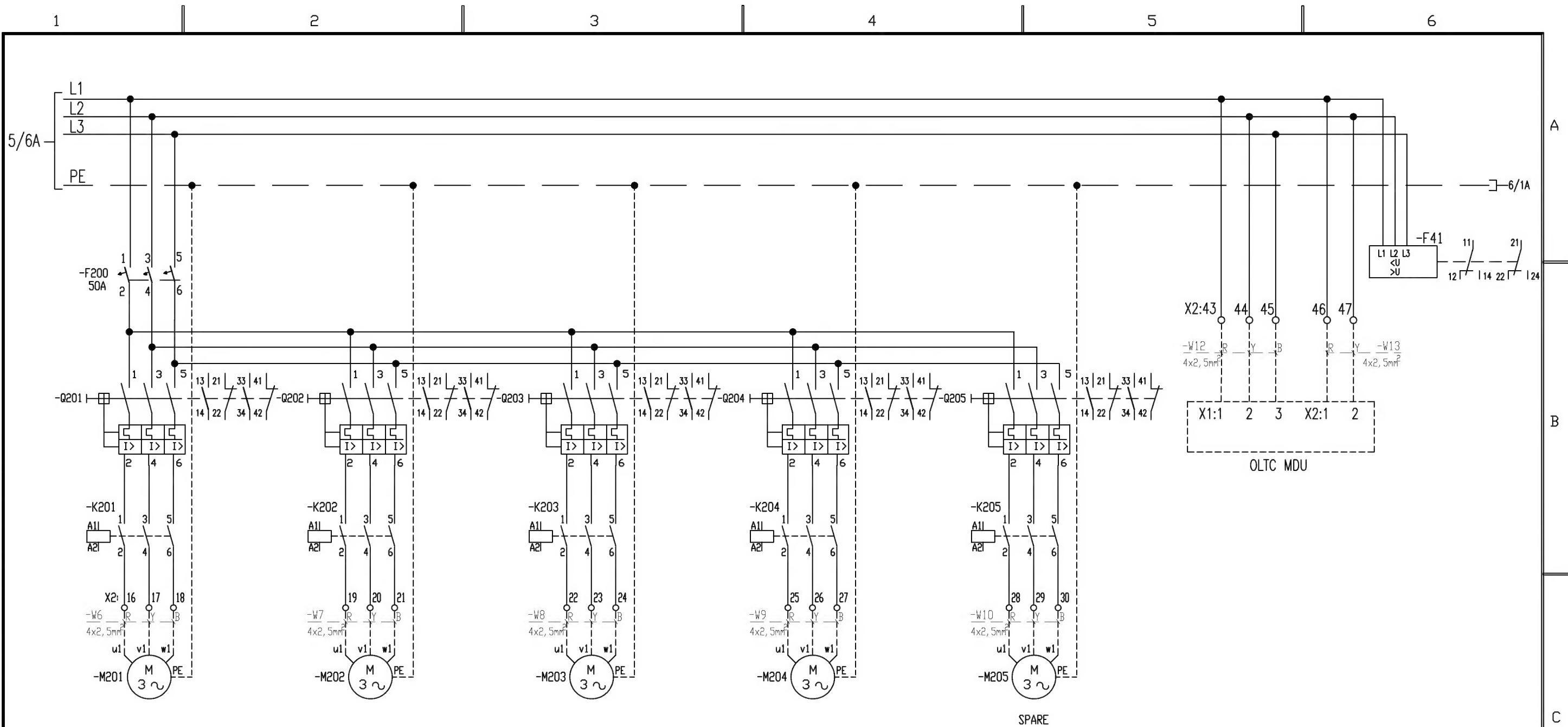
Design engineering review

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Note : Thermal set value of Q201,Q202,Q203,Q204,Q205 : 5A

Power circuit of fan motors

03	-F41 Added	-	26/01/13
02	Lineis Edited	-	31/10/12
01	Q201,.....Q205 Names Edited	-	22/08/12
Rev. ind.	Revision	Appd.	Date

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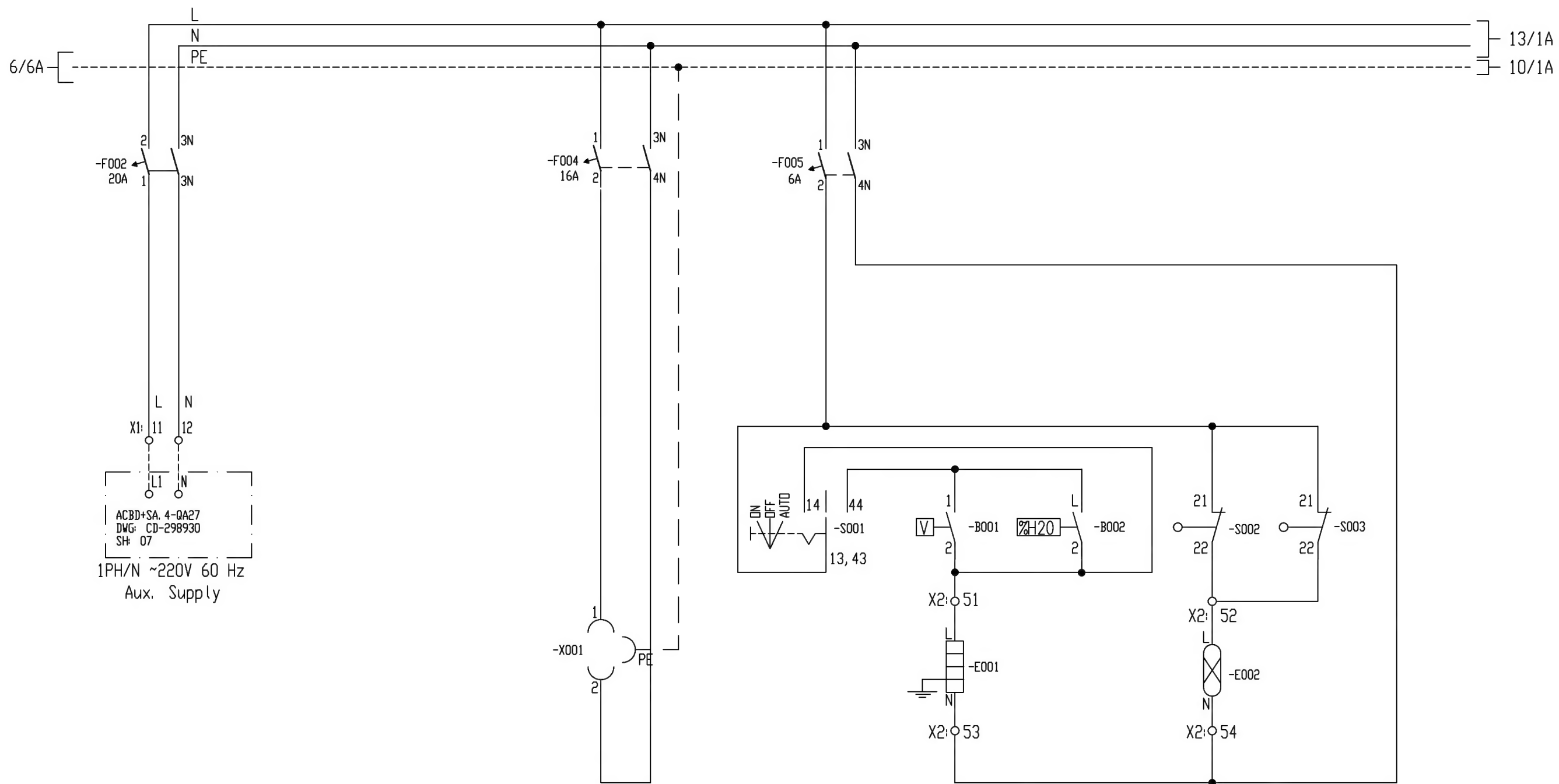


ABB ELEKTRİK SANAYİ A.Ş.


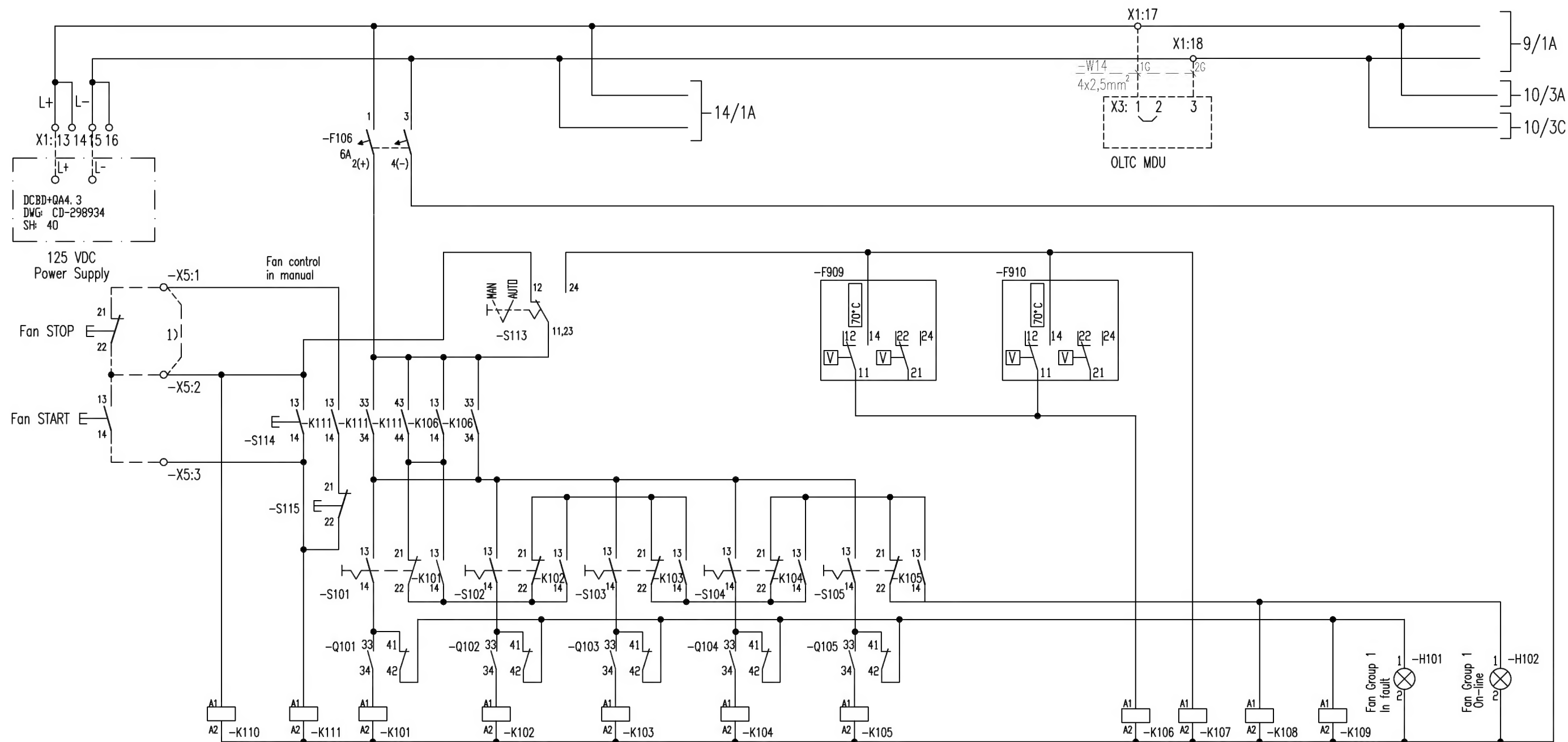
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ABB ABB Transformers

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1) Remove the link in case of using remote control buttons.

Control circuit of fan Group 1 motors

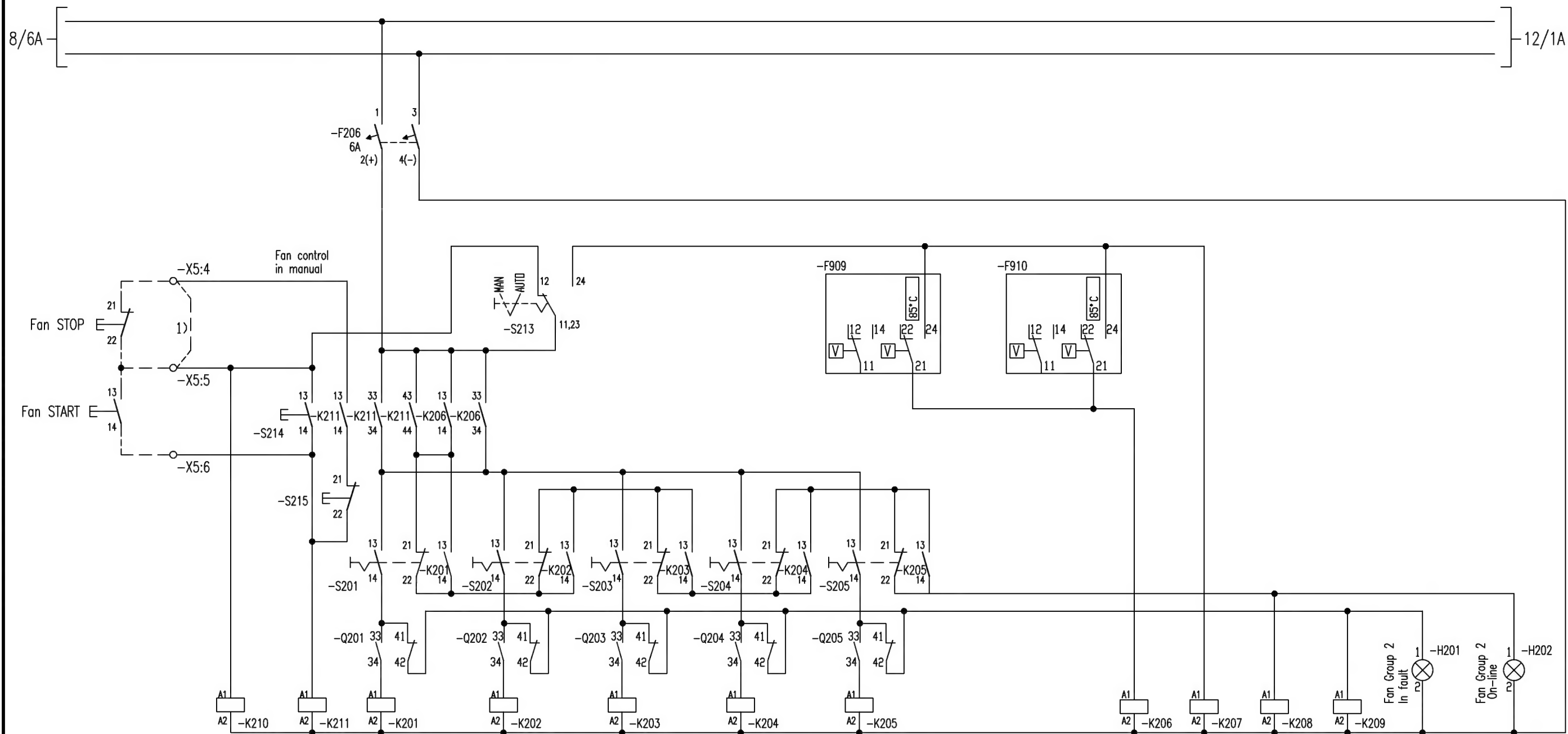
03	Revised	-	13/03/14
02	Line edited	-	31/10/12
01	-F908 Removed	-	22/08/12
Rev. ind.	Revision	Appd.	Date

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1) Remove the link in case of using remote control buttons.

Control circuit of fan Group 2 motors

01	-F908 Removed	-	22/08/12
Rev. ind.	Revision	Appd.	Date

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Inspection engineering review

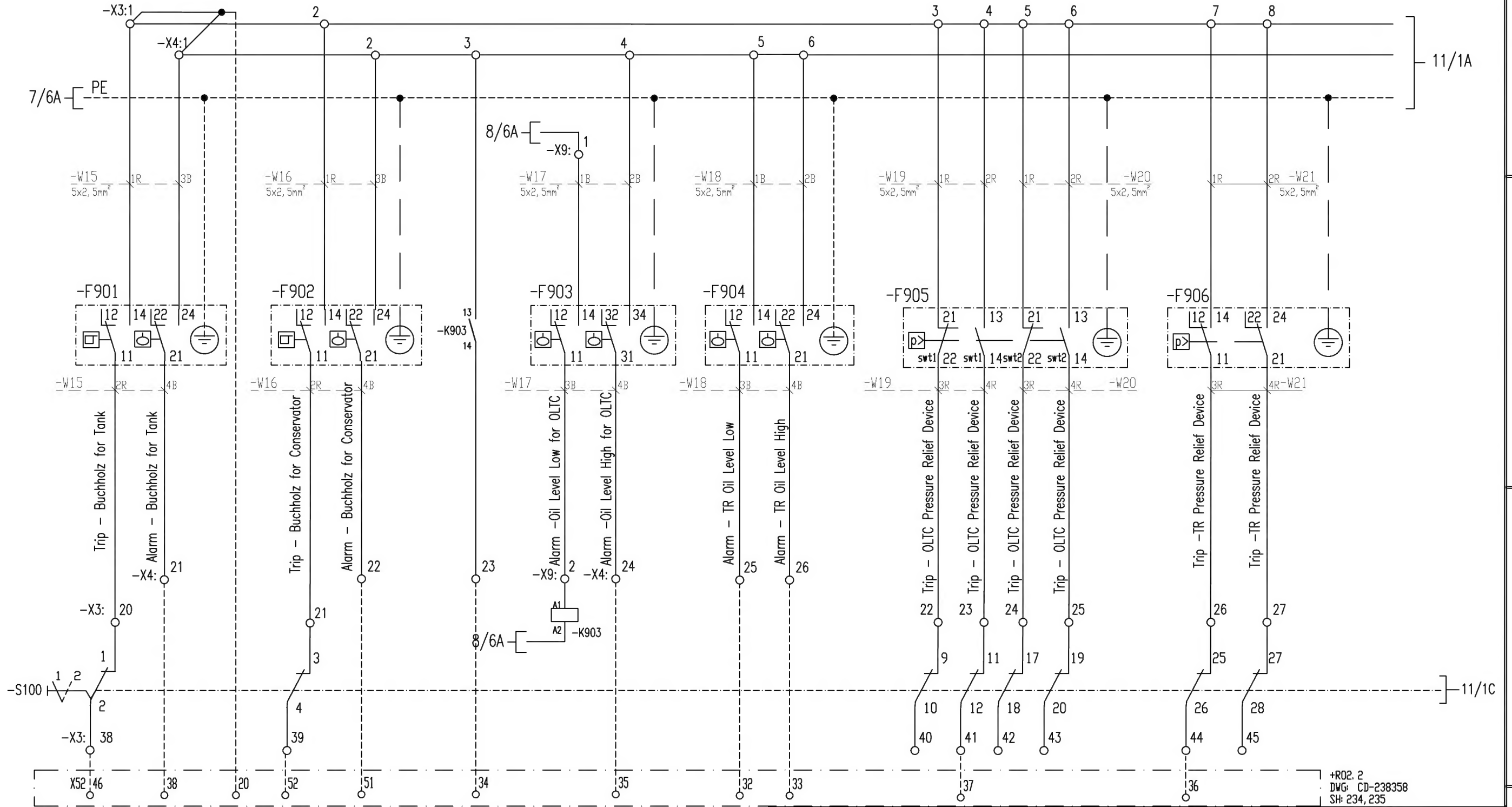
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- F901: Buchholz Relay for tank, EMB DR80
-F902: Buchholz Relay for conservator (Leakage detection) EMB DR25
-F903: Oil level indicator for OLTC, COMEM, Type LA22
-F904: Oil level indicator for tank, COMEM, Type LB22
-F905: Pressure relief device for OLTC, QUALITROL
-F906: Pressure relief device for Tank, QUALITROL XPRD00-00017729
- Protection relays of power transformer

03	Revised	-	13/03/14
02	Lineis Edited	-	31/10/12
01	Terminal Numbers Changed	-	22/08/12
Rev. ind.	Revision	Appd.	Date

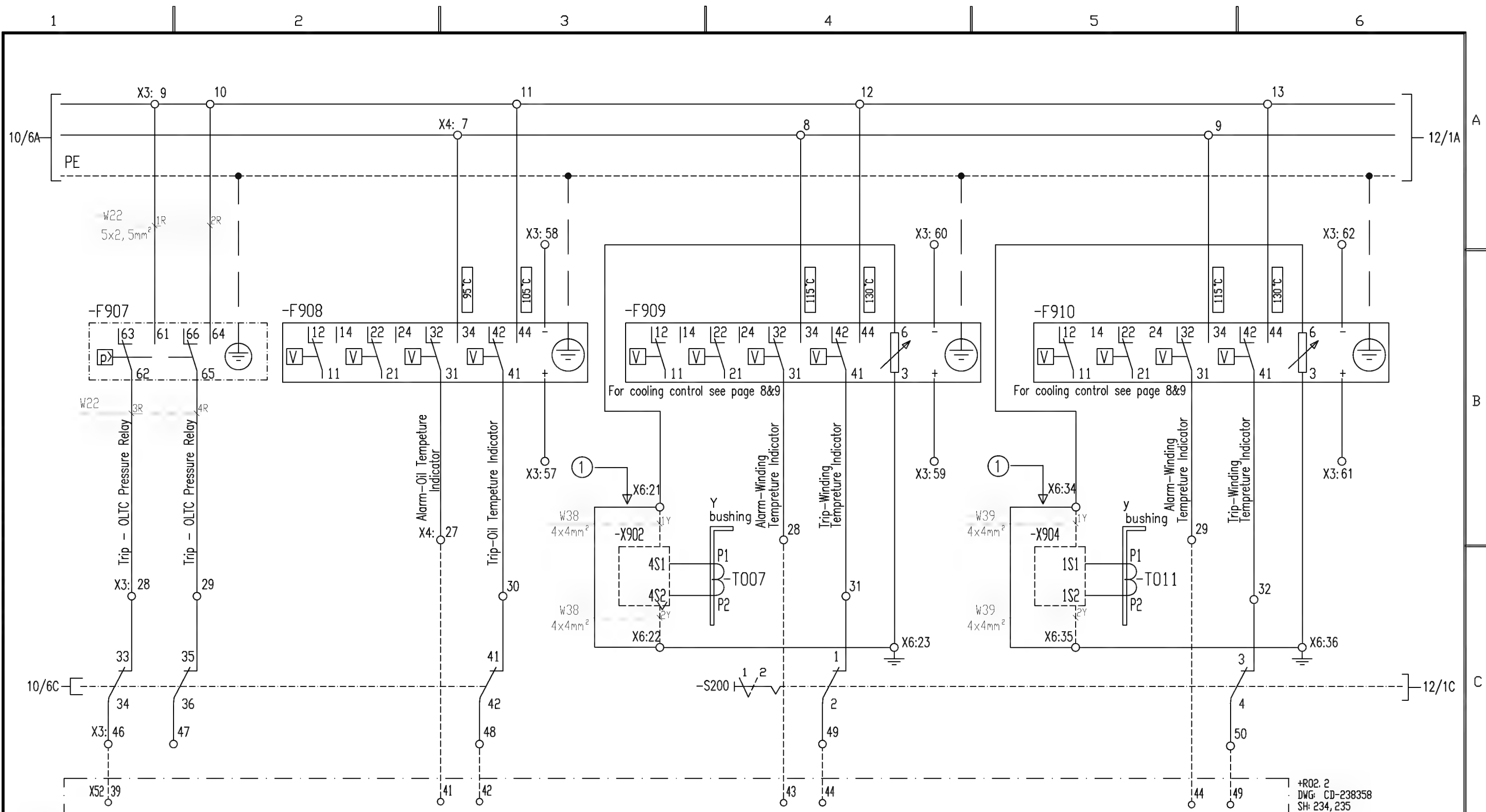
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-F907: Pressure relay for OLTC
-F908: Oil temperature indicator MESSKO, MT-ST 160SK /TT
-F909: Winding temperature indicator for HV MESSKO, MT-ST 160W/TT
-F910: Winding temperature indicator for LV MESSKO, MT-ST 160W/TT
-T007: Current transformer 323 / 2; 10 VA; 3Fs10 for HV winding temperature indication.
-T011: Current transformer 2510 / 2; 10 VA; 3Fs10 for LV winding temperature indication.
-X904, -X902: Terminal box of current transformer.

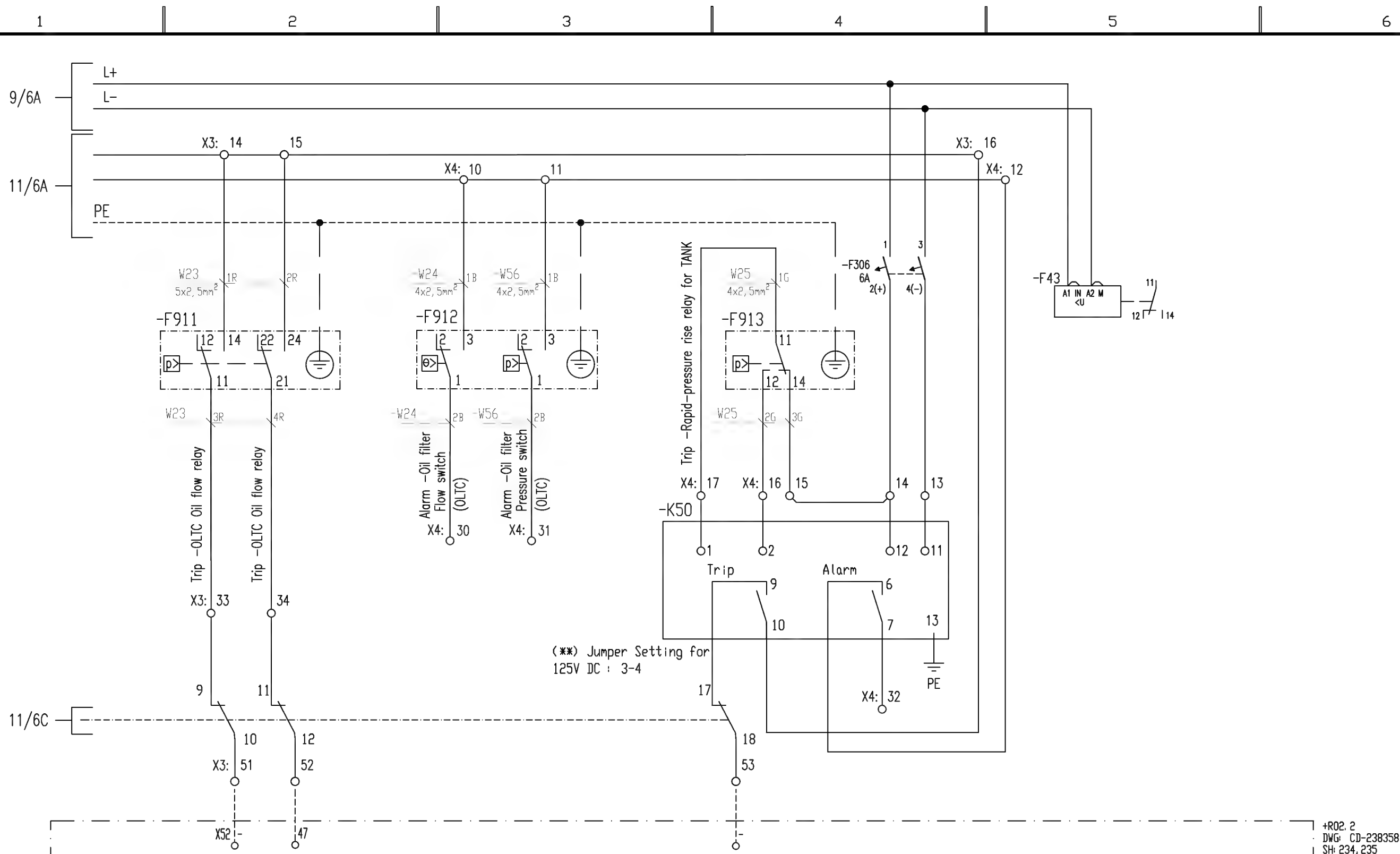
WARNING: For the adjustment of the matching resistor for the heating current of the Winding temperature indicators see "Winding temperature [compact] Series" BA 2038 catalogue of MESSKO.
For more information about Oil temperature indicator see "Oil temperature [compact] Series" BA 2038 catalogue of MESSKO.

① When current transformer is in use, remove the connection.

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-F911: Oil flow relay for OLTC, EMB Type ÜRF 25/10-2
 -F912: Oil filter unit
 -F913: Sudden Pressure relay main tank, EBM Type ÜRF
 -K50: Seal-in relay, QUALITROL 909-200-01
 WARNING: For the adjustment of the matching resistor for the heating current of the Winding temperature indicators see "Winding temperature [compact] Series" BA 2038 catalogue of MESSKO.
 For more information about Oil temperature indicator see "Oil temperature [compact] Series" BA 2038 catalogue of MESSKO.
 Protection relays of power transformer

04	Revised	-	13/03/14
03	-F43 Added	-	26/01/13
02	Lineis Edited	-	31/10/12
01	-F306, K50 Added, Term. Num. Changed	-	22/08/12
Rev. ind.	Revision	Appd.	Date

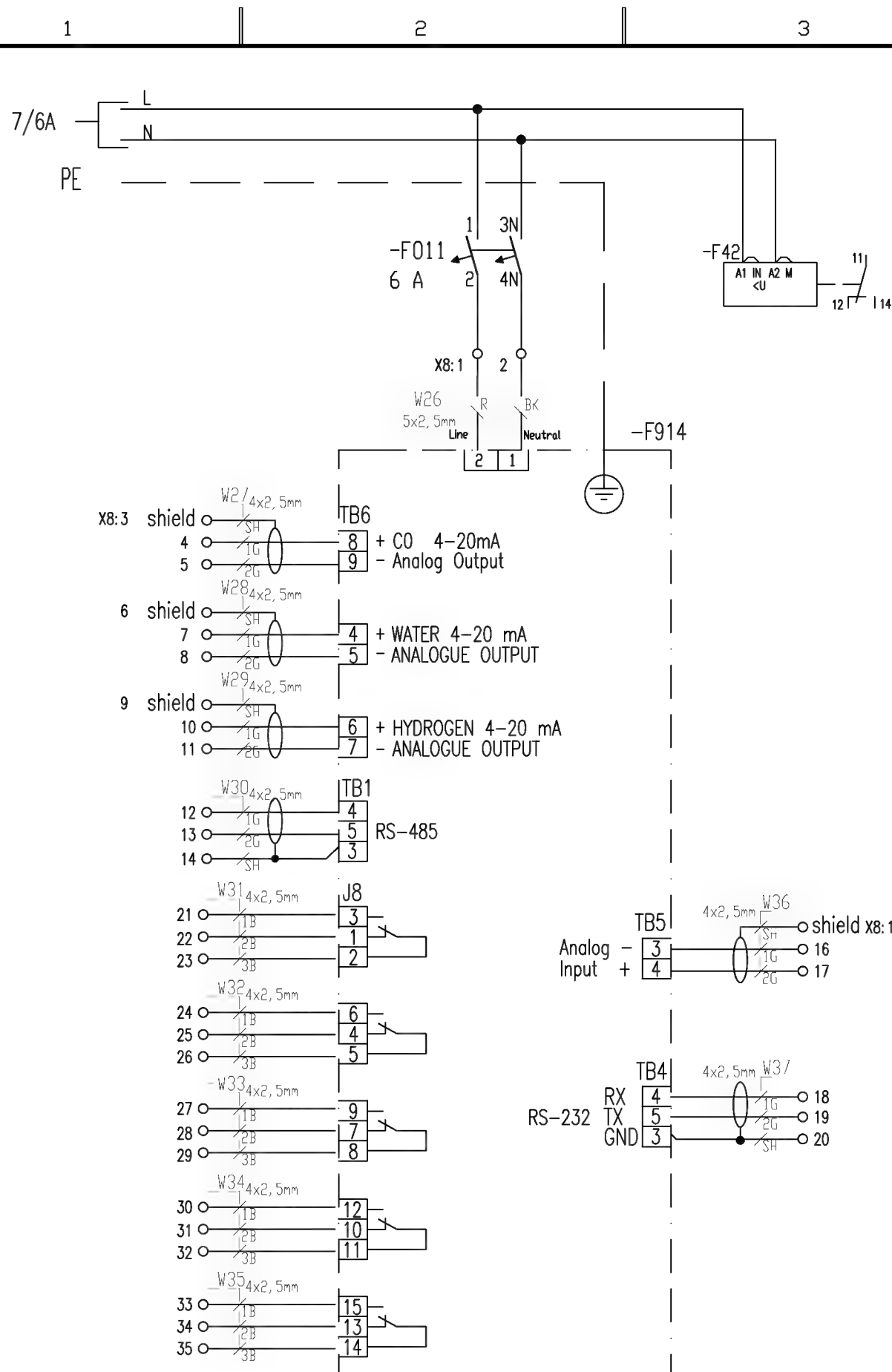
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ABB ABB Transformers

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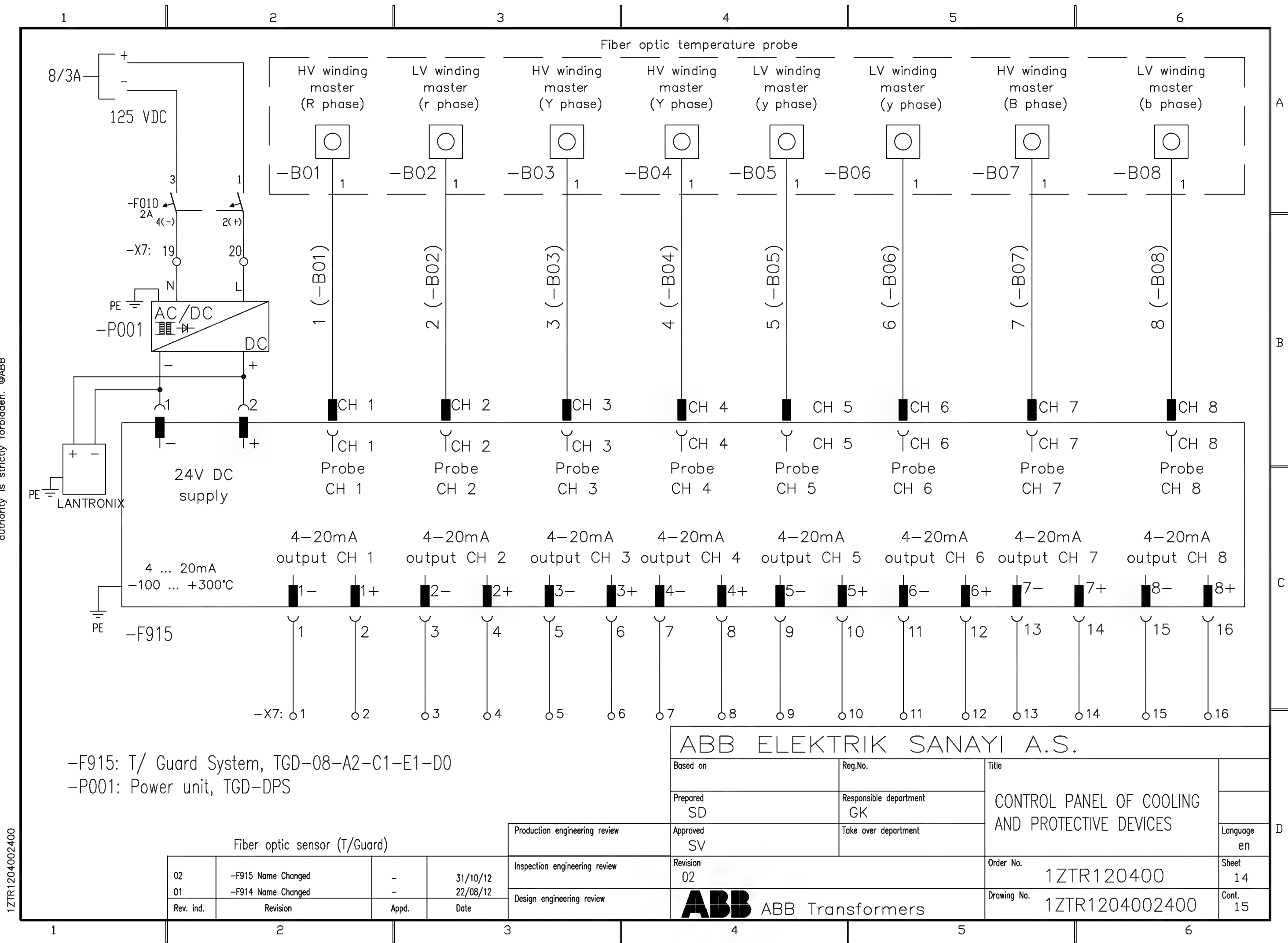
-F914:Dissolved Gas Analyzer (MORGAN SCHAFFER CALISTO 2)

02	-F42 Added	-	26/01/13
01	Devices Added	-	31/10/12
Rev. ind.	Revision	Appd.	Date

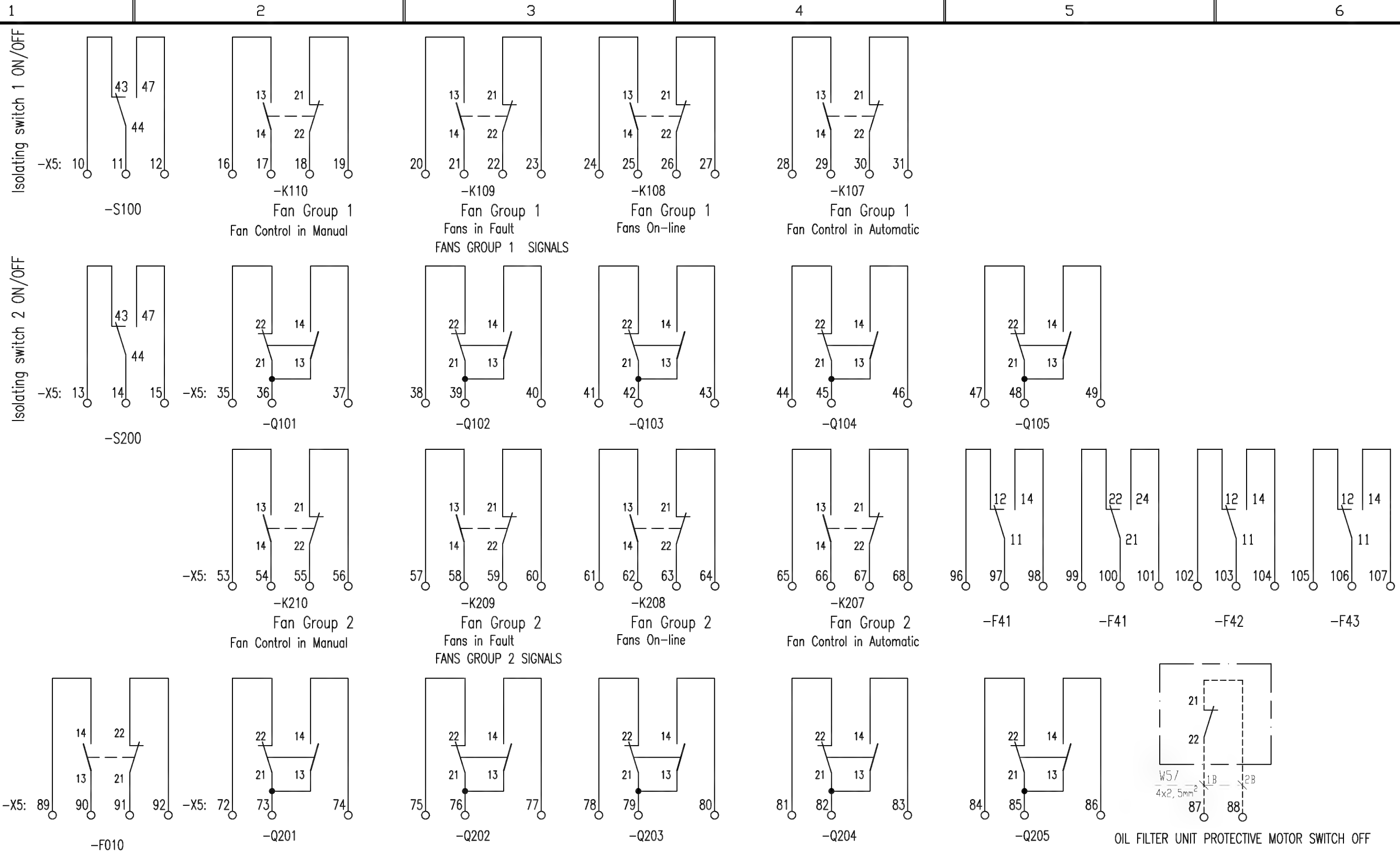
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T/Guard system circuit breaker

Remote signals

02	Under Voltage Relay	-	26/01/13
01	Contact Numbers Changed	-	31/10/12
Rev. ind.	Revision	Appd.	Date

Production engineering review

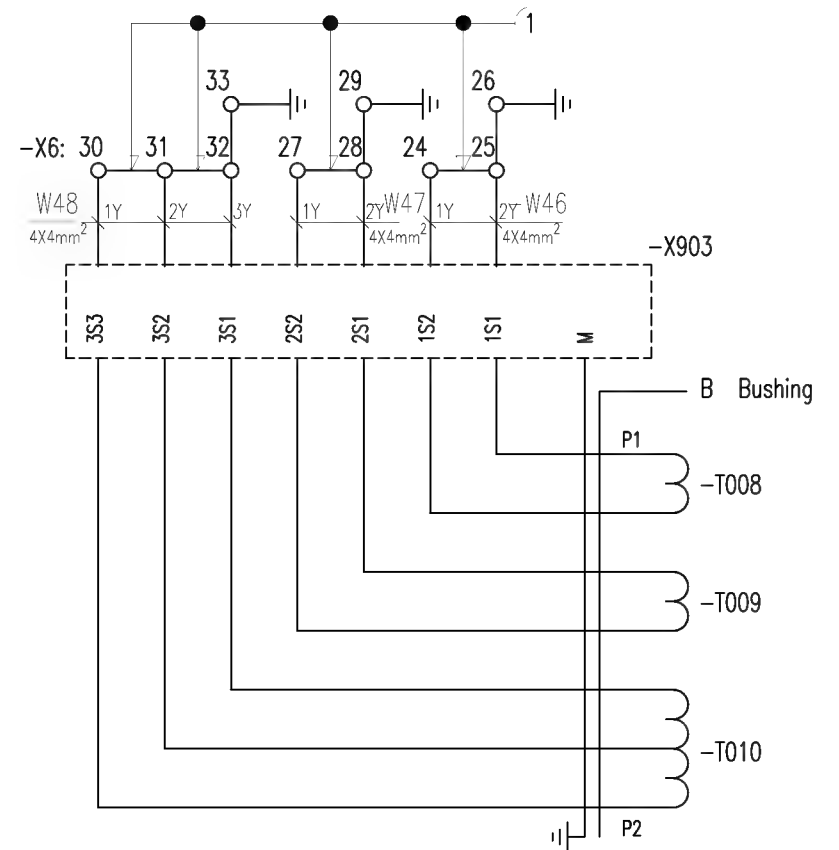
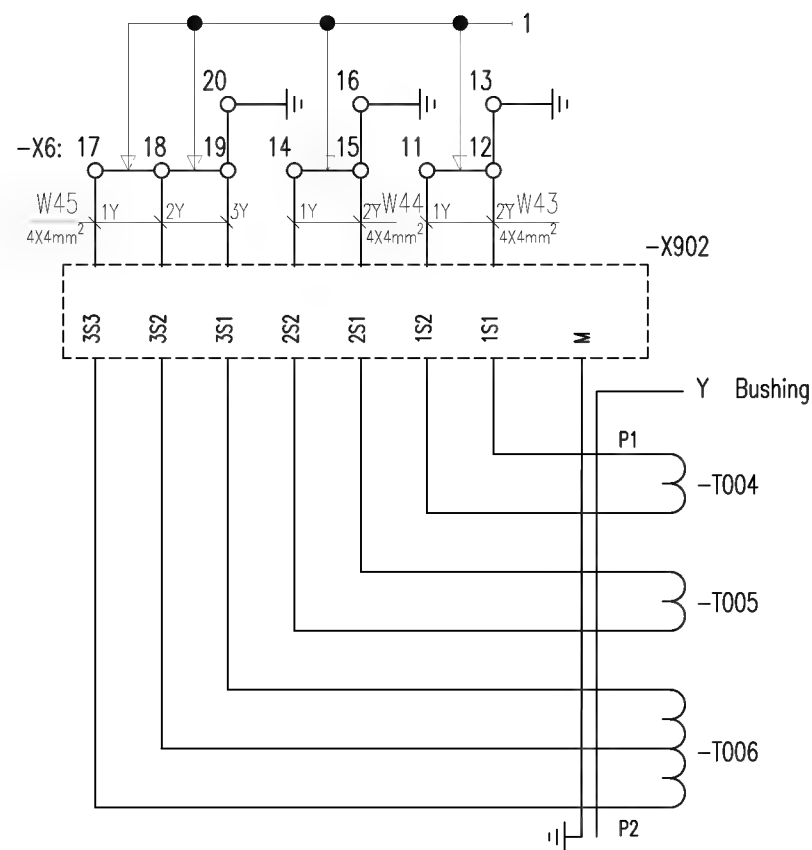
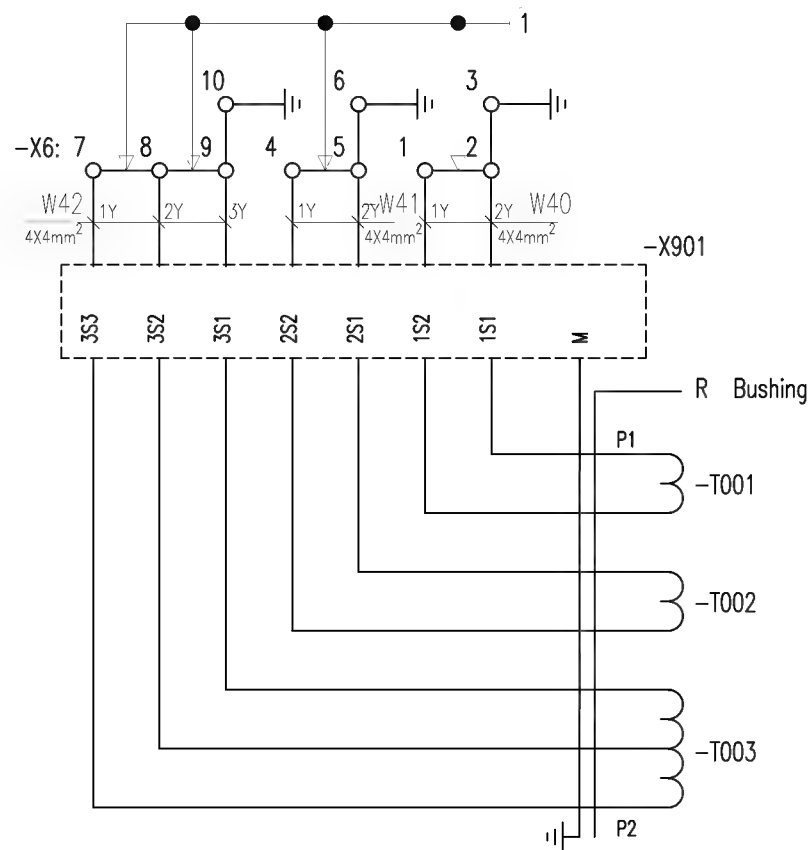
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Design engineering review

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- T001, -T004, -T008 : Current transformer 300/1A ; Class X , $V_k > 360$, $R_{ct} < 1\Omega$, $I_m < 50\text{mA}$ at V_k
-T002, -T005, -T009 : Current transformer 300/1A ; Class 10P10 , Burden 30 VA,
-T003, -T006, -T010 : Current transformer 1200-800/1A ; Class X , $V_k > 1400$, $R_{ct} < 2\Omega$, $I_m < 25\text{mA}$ at lowest ratio
-X901, -X902, -X903 : Terminal box of current transformer

① When current transformers are in use, remove the connection.

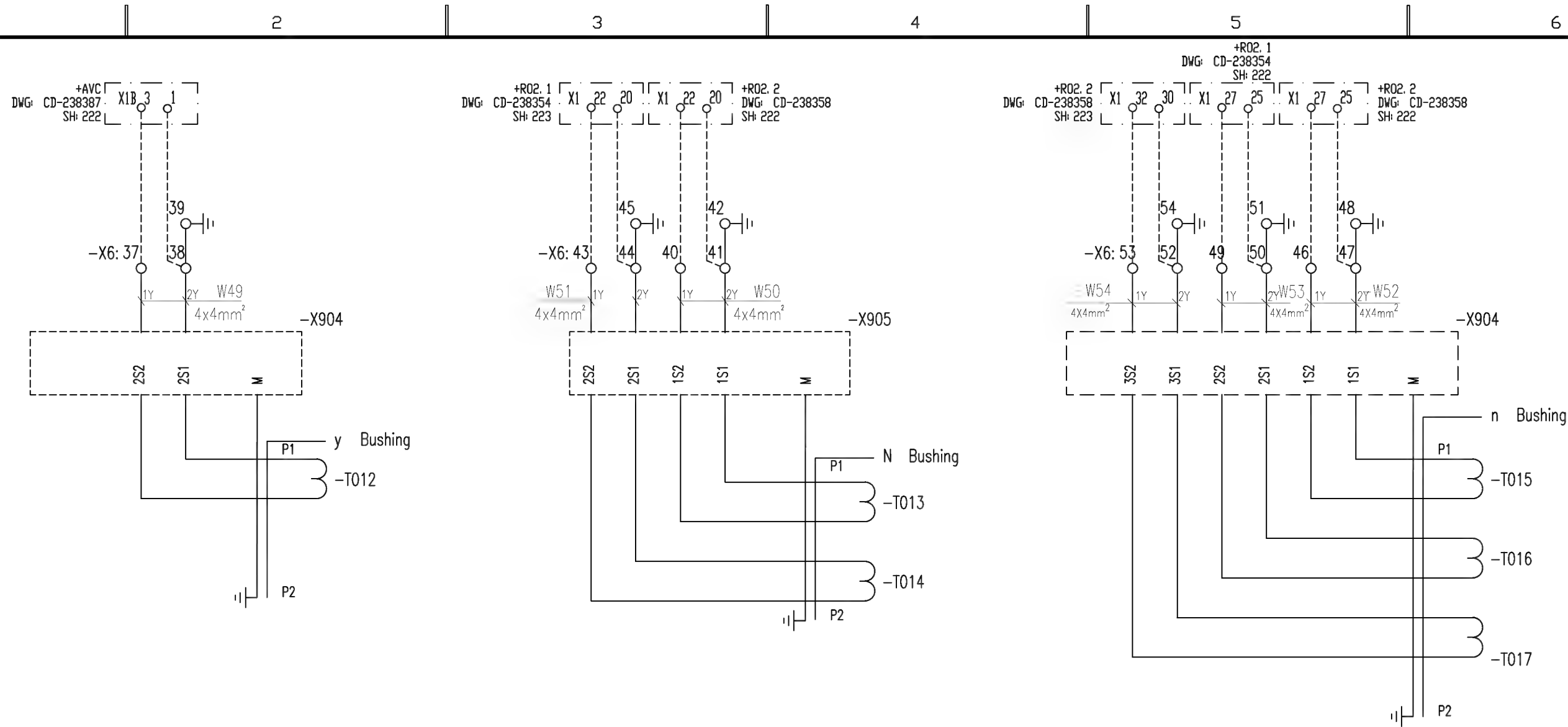
Current transformers

02	Line Numbers Changed	-	31/10/12
01	Line Numbers Changed	-	22/08/12
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- T013 -T014 : Current transformer 300/1A ; Class X ; $V_k > 360V$, $R_{ct} < 1\Omega$, $I_m < 50mA$ at V_k
-T012 : Current transformer 2510/5A ; Class 0,5 , 50VA
-T015 -T016 : Current transformer 3000/1A ; Class X ; $V_k > 765V$, $R_{ct} < 10\Omega$, $I_m < 25mA$ at V_k
-T017 : Current transformer 800/1A ; Class ; 5P20, 15VA

-X904, -X905,: Terminal box of current transformer

① When current transformers are in use, remove the connection.

Current transformers			
03	Revised	-	13/03/14
02	Line Numbers Changed	-	31/10/12
01	Line Numbers Changed	-	22/08/12
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Name of device Type Techn. data Label	Symbols for devices	Symbols, Current path from the schematic diagram			
Triple pole MCB ABB S 203-C 50 3P 50A 6kA FAN GROUP 1 SUPPLY FAN GROUP 2 SUPPLY					
	-F100	5/2B	5/2B	5/2B	
	-F200	6/1B	6/1B	6/1B	
Triple pole ABB S 284-C100 4P 100A 6kA POWER SUPPLY					
	-F001	5/1B	5/1B	5/1B	5/1B
Double pole MCB ABB S 201-NA C16 1P+N 16A 6kA					
	-F004	7/3B	7/3B		
Double pole MCB ABB S 201-NA C6 1P+N 6A 6kA					
	-F011	13/2A	13/2A		
	-F005	7/4B	7/4B		
Double pole MCB ABB S 201-NA C20 1P+N 20A 6kA					
	-F002	7/1B	7/1B		
Double-pole MCB ABB S 282-UC K6A 2P 6A 6kA FAN GROUP 1 CONTROL SUPPLY FAN GROUP 2 CONTROL SUPPLY SEAL-IN RELAY CONTROL SUPPLY					
	-F106	8/2B	8/2B		
	-F206	9/2B	9/2B		
	-F306	12/4B	12/4B		
Double-pole MCB ABB S 282-UC K2A, 2A 1NO + 1NC Aux. contact S2-H11 T/GUARD SYSTEM					
	-F010	14/1B	14/2B	15/2C	15/2C

In addition to the outdoor labels, all devices will be labelled in the cubicle with the abbreviations.

Device table

02	Material List Chnaged	-	31/10/12
01	Material List Chnaged	-	22/08/12
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Production engineering review

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Design engineering review

Name of device Type Techn. data Label	Symbols for devices	Symbols, Current path from the schematic diagram			
Door command button Telemecanique ZCP-21					
	-S002	7/5C			
	-S003	7/5C			
Switch ABB M2SS2-10B+MCBH-00 MCB-10+MCB-01 M101 OFF-ON M102 OFF-ON M103 OFF-ON M104 OFF-ON M105 OFF-ON M201 OFF-ON M202 OFF-ON M203 OFF-ON M204 OFF-ON M205 OFF-ON					
	-S101	8/2C	8/2C		
	-S102	8/3C	8/3C		
	-S103	8/3C	8/3C		
	-S104	8/3C	8/3C		
	-S105	8/4C	8/4C		
	-S201	9/2C	9/2C		
	-S202	9/3C	9/3C		
	-S203	9/3C	9/3C		
	-S204	9/3C	9/3C		
	-S205	9/4C	9/4C		
Push button ABB MP1-10G+MCBH-00+MCB-10 MP1-10R+MCBH-00+MCB-01 FAN GROUP 1 START FAN GROUP 1 STOP FAN GROUP 2 START FAN GROUP 2 STOP					
	-S114	8/2B			
	-S115		8/2C		
	-S214	9/2B			
	-S215		9/2C		
Selector switch ABB M2SS2-10R+MCBH-00 MCB-10+MCB-01 FAN GROUP 1 MAN. /AUTO. FAN GROUP 2 MAN. /AUTO.					
	-S113		8/3B		
	-S213		9/3B		

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Name of device Type Techn. data Label	Symbols for devices	Symbols, Current path from the schematic diagram
Heater STEGO HG 140, 60W, 220VAC		
	-E001	7/4C
Illumination lamp 1*8W, 220VAC ALLROUND		
	-E002	7/5C
Signal lamp ABB ML1-100R+MCBH-00+MLBL-05R ML1-100G+MCBH-00+MLBL-05G Fan Group 1 in fault Fan Group 1 on-line Fan Group 2 in fault Fan Group 2 on-line		
	-H101	8/6C
	-H102	8/6C
	-H201	9/6C
	-H202	9/6C
Contactor ABB AF09-30-10-13 125 V DC		
	-K101	8/2C
	-K102	8/3C
	-K103	8/3C
	-K104	8/4C
	-K105	8/4C
	-K201	9/2C
	-K202	9/3C
	-K203	9/3C
	-K204	9/4C
	-K205	9/4C
Selector switch ABB M3SSC1-10B + MCBH-00 2*MCB-10		
Heater ON-OFF-AUTO	-S001	7/4C

Device table

01	Material List Chnged	-	31/10/12
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Inspection engineering review

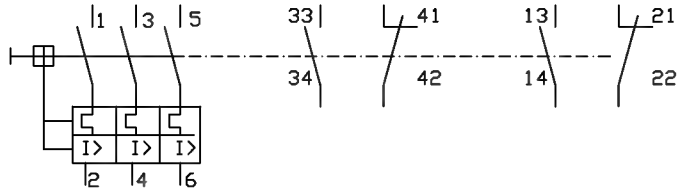
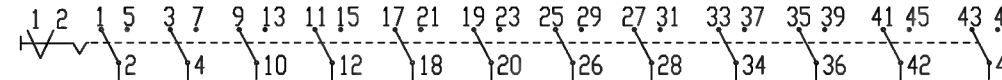
Design engineering review

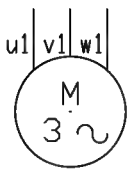
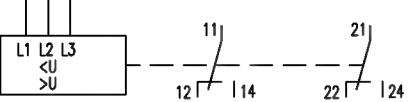
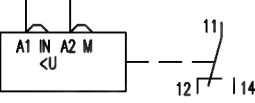
Name of device Type Techn. data	Symbols for devices	Symbols, Current path from the schematic diagram
Aux. contactor ABB NF31E-13 125 V DC		
	-K106	8/5C
	-K107	8/5C
	-K108	8/5C
	-K109	8/5C
	-K110	8/2C
	-K111	8/2C
	-K206	9/5C
	-K207	9/5C
	-K208	9/5C
	-K209	9/5C
	-K210	9/2C
	-K211	9/2C
	-K903	10/3C
SOCKET SCHNEIDER-ELECTRIC PKY16F423 220V 60Hz, 16A		
	-X001	7/3C
Thermostat STEGO KTD 011 0-60 °C		
	-B001	7/4C
Humidistad STEGO MFR 012 35...+95°C 35...95% rF		
	-B002	7/4C

In addition to the outdoor labels, all devices will be labelled in the cubicle with the abbreviations.

ABB ELEKTRIK SANAYI A.S.

Based on	Reg.No.	Title	
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Name of device Type Techn. data Label	Symbols for devices	Symbols, Current path from the schematic diagram
Circuit - Breaker ABB MS116-6.3 4-6, 3A HK1-11 1NO+1NC Aux. contact HKF1-11 1CO Aux. contact -Q101 -Q102 -Q103 -Q104 -Q105 -Q201 -Q202 -Q203 -Q204 -Q205		
Isolating switch Kraus Naimer CA10-A376-600 -S100 -S200		

Name of device Type Techn. data Label	Symbols for devices	Symbols, Current path from the schematic diagram
Fan motor FC100 220 VAC. 3Phase. Star 1,2 / 1,3kW 470rpm (nom.)		
	-M101	5/2C
	-M102	5/3C
	-M103	5/3C
	-M104	5/4C
	-M105	5/5C
	-M201	6/1C
	-M202	6/2C
	-M203	6/3C
	-M204	6/4C
	-M205	6/4C
Under Voltage Siemens 3UG46 15-1CR20		
-F41	-F41	6/6A 15/5B 15/5B
Under Voltage Siemens 3UG46 32-1AW30		
-F42	-F42	13/3A 15/6B
-F43	-F43	12/5A 15/6B

In addition to the outdoor labels, all devices will be labelled in the cubicle with the abbreviations.

Device table

02	Material List Chnaged	-	26/01/13
01	Material List Chnaged	-	31/10/12
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Terminal type: Phoenix OTTA-25

R : RED
Y : YELLOW
B : BLUE
G : GREY
G/Y : GREEN/YELLOW
BK : BLACK

Terminals -X1

02	Revised	—	13/03/14
01	Terminal Plan Changed	—	31/10/12
Rev. ind.	Revision	Appd.	Date

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1ZTR1204002400

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1ZTR1204002400

1		2		3		4		5		6		
Line												
Page number of function												
Wire Number												
Designation group: -X2	Terminal	Connection Number		-E001	L							
		Code		-E002	L							
	Terminal Number		51	52	53	54						
	Link		o	o	o	o	o	o	o	o	o	o
	Terminal	Connection Number		-B001	2							
Code		-S001	22	N	N							
Cable No	Cable type											


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Terminal type: Phoenix OTTA-6

R : RED
Y : YELLOW
B : BLUE
G : GREY
G/Y : GREEN/YELLOW
BK : BLACK

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ZTR1204002400

Terminals –X3			
04	Revised	–	13/03/14
03	Terminal Plan Changed	–	29/07/13
02	Terminal Plan Changed	–	31/10/12
01	Terminal Plan Changed	–	22/08/12
Rev. ind.	Revision	Appd.	Date

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Terminal type: Phoenix OTTA-6

R : RED
Y : YELLOW
B : BLUE
G : GREY
G/Y : GREEN/YELLOW
BK : BLACK

Terminals -X5

01	Terminal Plan Changed	–	31/10/12
Rev. ind.	Revision	Appd.	Date

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[illegible]

Terminal type: Phoenix OTTA-6-T P/P


R : RED
Y : YELLOW
B : BLUE
G : GREY
G/Y : GREEN/YELLOW
BK : BLACK

Terminals -X6

03	Revised	–	13/03/14
02	Terminal Plan Changed	–	31/10/12
01	Terminal Plan Changed	–	22/08/12
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Terminal type: Phoenix : OTTA-6

R : RED
Y : YELLOW
B : BLUE
G : GREY
G/Y : GREEN/YELLOW
BK : BLACK

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Terminals -X9

02	Terminal Plan Changed	—	26/01/13
01	Terminal Plan Changed	—	31/10/12
Rev. ind.	Revision	Appd.	Date

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